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GUMMOSIS AND PSOROSIS OF CITRUS TREES

By ARTHUR S. RHOADS
Associate Plant Pathologist, Florida Experiment Station

Gummosis and psorosis are destructive bark diseases of citrus trees occurring in many groves throughout Florida, being of such widespread occurrence in certain sections as to cause serious damage to trees. As a rule, Florida growers do not distinguish between these two closely related diseases but apply the general term "gummosis" to all bark-scaling diseases characterized by more or less exudation of gum. These diseases, however, have certain well-defined distinguishing features.

DISTINCTION BETWEEN GUMMOSIS AND PSOROSIS

Gummosis attacks chiefly the cultivated lemon, grapefruit, and orange, being especially common and severe on the first two. Psorosis attacks chiefly the tangerine, orange, and grapefruit. Tangerines develop this trouble more frequently than any other commercially grown citrus tree in Florida but seem to withstand the disease longer than either oranges or grapefruit. Of the oranges, the Valencia appears to be particularly susceptible. The sour orange is very resistant to both gummosis and psorosis.

Gummosis appears at first as small longitudinal cracks in the bark of the trunks and larger branches, from which gum exudes and frequently runs down the bark, forming what is known as "tears". This exudation of gum is most active in the spring and early summer. If not washed away by rains, the gum hardens and collects in masses at the cracked places in the bark. Later, the surface of the bark, or sometimes the entire bark down to the wood, will become discolored on either side of the ruptured place and die, often separating from the wood in local areas by the formation of liquid gum beneath it. As the disease progresses, additional areas become infected and the bark about the older cracks becomes infiltrated with gum, dries out and hardens, and is forced up in irregular, partially detached scales as the bark remaining alive beneath begins to callus over. The areas heal in many cases and the scales or bits of dead bark tissue slough off, leaving a series of light-colored to brownish, resinous-appearing scars. In some cases the gum flow ceases and the disease may remain quiescent for a time, but often breaks

out anew later in advance of the old area. In the well advanced cases of the disease the bark acquires a scaly, ulcerated appearance which may involve considerable portions of the trunks or branches. In many cases, where the disease does not seem to be particularly serious, the bark between the gumming cracks, together with the underlying wood, may become invaded and discolored by the Diplodia fungus and large areas may be killed within a short time, with the result that the life of large limbs or the trunk may be threatened.

Psorosis usually begins with the loosening and scaling off of a number of small pieces of the outer bark, or as an inconspicuous spot in which the bark becomes infiltrated with gum and dies, the outer bark well in advance of this area later cracking loose and scaling off. As the disease progresses, which often occurs very slowly at first, the original scaly bark area enlarges from year to year, fresh scaling of the outer bark developing from the advancing margin of the lesion. Gum may appear on the surface of the bark, especially during the active growing season of the tree, but its exudation is not copious as in gummosis, usually being reduced to a few scattered drops at either end of the lesion. Up to a certain point in the development of the disease, new bark forms under the outer bark that loosens and scales off. The new bark formed within the affected area eventually becomes somewhat thickened, rough and brownish. This new bark appears to remain healthy for a time but the disease usually breaks out anew later and the scaling process continues. By this time the lesions become very conspicuous because of the pronounced breaking up of the outer bark at the margins into large scales or shaggy strips which curl away from the trunks or branches of the tree as these loosened pieces are sloughed off. The disease may often completely encircle the attacked trunk or limb without causing serious injury to the cambium or underlying wood but, after extensive gum formation occurs in the cambium, the growth of the tree is reduced and the bark may be killed in scattered spots or even over large areas. In the late stages of the disease the outer wood may become involved and discolored and enough of the bark may be killed to cause a dying back and eventual girdling of the top of the tree in so far as it was dependent upon the functioning of the attacked part.

Psorosis exhibits a definite tendency to encircle the attacked trunk or branch, as a result of which, in advanced stages, it forms band-like lesions varying in length from a few inches to a foot or more on the smaller branches to from 2 to 3 feet on the trunks and larger limbs. This characteristic feature further serves to distinguish this disease from gummosis. Moreover, psorosis lesions often occur on the smaller branches as well as on the trunks and main limbs, whereas the most common and typical form of gummosis is largely confined to the trunks and larger branches.